The long drive home: control beliefs and commuting intentions of mine workers

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Abstract

Purpose: It is relatively common for many mine workers in Australia to drive an average of 250 kilometers to and from work following long shifts and shift blocks. Despite the long distances travelled following long shifts of 12- to 14-hours, there is evidence to suggest that these workers are not engaging in a break following their shift prior to driving home. This naturally raises issues of fatigue and sleepiness when driving. There is limited research in respect to commuting behaviours of mine workers and little is known about the factors that influence these workers to leave site immediately following their shift. Using the theory of planned behaviour, this paper examines individual control beliefs that encourage or prevent workers from leaving the site immediately following their shift block.

Method: Data was collected using a cross-sectional survey. The survey instrument was developed following a series of in-depth interviews with workers from a Queensland coal mine (n=37). The quantitative written survey sample (n=461) was drawn from the same coal mine and consisted of workers from all levels of the organisation.

Results: The results examine workers intentions to leave the work site and drive home immediately following a shift block. The results show differences in control beliefs between workers finishing night shifts compared with those finishing day shifts.

Implications: An understanding of these control beliefs may potentially inform more targeted intervention strategies in the attempt to encourage a safer approach to driving home following shift blocks.

Introduction

Between 2000 and 2014, employment in the mining industry has grown by 42% and now the industry employs approximately 269,000 people across Australia (Office of the Chief Economist, 2014). Despite the tough economic conditions faced by the industry and a general downturn in the amount of work available, workers continue to express interest toward working in the resource industry. Many mine workers in Australia live significant distances from work due to the remote location of many mine sites. As a result of these work locations, mine workers are required to commute significant distances to and from their work site following long shifts and shift blocks. Previous research describes mine workers driving an average of 250 kilometres home (Di Milia & Bowden, 2007). Within the industry this commuting practice is often referred to as long-distance commuting (LDC) or drive-in/drive-out (DIDO) work.

DIDO workers face significant risks associated with *the long drive home*. These risks include factors such as fatigue-related issues, time of day spent travelling, encountering animals on the road and driving in remote areas. In a 2009-10 report regarding work-related fatalities in Australia, the highest commuter fatality rate was recorded by the mining industry, at a rate of 2.3 commuter deaths per 100,000 workers (Safe Work Australia, 2012). Furthermore, examination of traffic crashes involving work-related driving demonstrates that crashes occurring while commuting typically resulted in more severe injuries compared to crashes occurring while working (Boufous & Williamson, 2006). Despite these risks, literature investigating the commute of mine workers has typically concentrated on the plight of the fly-in/fly-out (FIFO) worker, ignoring the issues faced by workers who are required to drive. Furthermore, due to the limited research workplace interventions

tend to be inconsistent and ad hoc across organisations highlighting a need for targeted research-based guidelines and interventions.

In addition to the significant distances travelled, there is also an expectation for these workers to engage in a demanding work roster during their time on site. Mining rosters consist of a set number of consecutive work days or nights, with the worker staying in site-based accommodation during the work period. This consecutive work period is known as a shift block. The length of a shift block varies, however time on site usually ranges between 4- and 28-days. During the shift block, workers regularly engage in 12- to 14- hour shifts, sometimes working irregular hours (Di Milia & Bowden, 2007). Shift work, as well as irregular and extended hours are known risks for commuting (e.g., Scott et al., 2007). Following the end of the shift block, the worker is afforded a set number of rostered days off (between 3- and 14-days). This arrangement is known as a 'lifestyle roster' (Misan & Rudnik, 2015). At the end of the shift block, DIDO workers are expected to drive home for their rostered days off, providing it is in accordance with organisational fatigue management policies. Alternatively, the worker is provided with site-based accommodation. This practice incorporates journey and fatigue management policies, which prescribe that workers engage in a workday that is no longer than 14-hours. This workday time limitation must include the time required to commute home. However, these policies are not enforceable.

Anecdotal evidence from industry experts describe that a key problem is the propensity for workers to leave site and drive home immediately following the shift on the last day of their rostered shift block. However, it is understood that to date no research has explored the factors that motivate these workers to leave site immediately. Industry experts describe that the behaviour of leaving site straight after a shift block is more prominent when workers finish a block of night shifts. It is proposed that the variation in this behaviour is due to the time of day the driving occurs. For example, following a night shift, workers drive home during daylight hours and are more likely to perceive the driving behaviour safe. Comparatively, if workers were to leave immediately following a day shift block, then the ensuing journey would occur at night. Accordingly, it is proposed that workers finishing day shifts are less inclined to leave site immediately following the shift block. Workers have the opportunity to stay in site accommodation and rest prior to the journey home. However, regardless of the time of day the journey occurs, these workers are driving significant distances to travel home following consecutive workdays and long shifts.

Despite the strenuous work and commuting arrangements, there are many factors that contribute to continued worker engagement in the LDC lifestyle. These factors include, the perception of a comfortable lifestyle as a result of an attractive salary and flexible working arrangements (e.g., 'lifestyle roster') (Houghton, 1993; Misan & Rudnik, 2015). However, little is known about those factors which motivate workers to engage (or otherwise) in a journey immediately following a shift. This paper reports on a small component of a larger program of research, which uses the TPB to investigate influences on worker behavioural intentions to leave site immediately following a day or night shift block to commence the journey home. The key aim of this paper is to examine the beliefs underpinning the perceived control workers have in respect to leaving site immediately. These beliefs are examined by comparing those who exhibit a high intention to leave site immediately with those who exhibit a low intention. Specifically, this study focuses on those factors that encourage (facilitate) workers to leave site immediately following a shift block and those factors that prevent this behaviour (barriers).

Theoretical perspective

The Theory of Planned Behaviour (TPB) is a widely used decision making model that posits behaviour is determined by individual behavioural intentions and perceived behavioural control (Ajzen, 1991; Armitage & Conner, 2001). According to the TPB, individual intentions are determined by individual attitudes toward the target behaviour, subjective norms and perceived

behavioural control (PBC). Additionally, these antecedents are informed by underlying beliefs (Ajzen, 1991). Attitudes are associated with the evaluation of the behaviour – whether the perception is positive, negative or otherwise. This attitudinal perception is based on underlying behavioural belief relating to the advantages and disadvantages of performing the behaviour (Ajzen, 1991). Subjective norms refer to the perception that those who are important to the individual either encourage or discourage the performance of the behaviour. This normative construct is based on the underlying normative belief that engaging in the target behaviour is approved or disapproved by specific reference groups (Ajzen, 1991). Finally, perceived behavioural control is the perceived amount of control one has over performing the target behaviour, which is based on underlying control beliefs. Control beliefs are internal factors that may facilitate or impede engaging in the target behaviour (Ajzen, 2002b). While these underlying beliefs are typically assessed together, the lack of previous research investigating LDC decisions of mine workers provides justification for an analysis which focuses on one belief type. The focus on control beliefs in the current study guides initial contemplation of potential educational campaigns and targeted interventions, specifically in the resource sector in Queensland and Australia.

Method

Research design and procedure

Data was collected using a cross-sectional survey distributed to mine workers during scheduled safety training sessions. Participants were recruited via convenience sampling from a large Queensland mine site based in the Bowen Basin. Ethics approval was obtained from the Queensland University of Technology Human Research Ethics Committee (approval number 1400000399).

Measures

A questionnaire was developed based on the responses of a series of qualitative interviews. This questionnaire was developed in line with standardised TPB questions (Ajzen, 1991, 2002a; Fishbein, 2003). Given the proposed variation in behaviour following day and night shift blocks, two versions of the survey were created. Both versions contained the same measures. However, one version of the survey examined behavioural intentions following day shifts and one version examined behavioural intentions following night shifts. Participants were requested to respond to one version of the survey only and their responses were based on their behavioural intentions during a typical month. Allocation to each group was random. The examination of behavioural intentions was limited to the journey home *immediately* after finishing a rostered day or night shift block. The term immediately included time to pack the car, have a shower and have something to eat. This definition was provided to participants verbally, as well as on the cover sheet of the survey. Measures were adapted from previous TPB research to align with the target behaviour and context (Ajzen, 1991, 2002b; Fishbein, 2003).

Intention to commute home immediately following a day or night shift block was measured using three items (e.g., *"I intend to drive home immediately after finishing my day/night shift block"*, *"It is likely that I will drive home immediately after finishing my day/night shift block"* and *"I am willing to drive home immediately after finishing my day/night shift block"*; 1, strongly disagree to 7, strongly agree). These items were adapted from Ajzen (1991, 2002a) and Fishbein (2003). Based on an assessment of Cronbach's alpha, these items held an acceptable level of internal consistency (α=.96). Composite scores were calculated by summing the total observations for intentions and dividing by the number of items (Field, 2013). If more than one item was missing, it was determined that the case did not have sufficient information and the case was removed from further analyses.

Control beliefs were assessed based on a series of statements which were identified during qualitative interviews (*n*=37). Participants were required to respond to nine barrier items (see Table 1) and seven facilitator items (see Table 2). Using a question stem adapted from Ajzen (1991, 2002a) and Fishbein (2003), participants were asked to respond to questions associated with the likelihood that a barrier or facilitator statement would encourage or prevent the behaviour of driving home immediately following a shift block (e.g., *"How likely is it that the following factors would encourage you to drive home immediately after finishing a day shift block in a typical month"* and *"How likely is it that the following factors would prevent you from driving home immediately after finishing a day shift block in a typical month";* 1, very unlikely to 7, very likely).

Results

Participants

Of the 492 surveys distributed, 461 responses were received resulting in a response rate of 93.7%. Participants responding to the night shift survey made up 48% of respondents (*n*=222) and those responding to the day shift survey made up 52% of respondents (*n*=239). As would be expected, males make up the majority of the respondents (89%), with an average age of forty years. Mine operation occupations, such as operators, drill specialists and blast specialists represented the 69% of respondents. The sample showed an average industry experience of ten years. The average daily shift is 12-hours, which is consistent with the trend in the industry (Di Milia & Bowden, 2007). Participants reported travelling significant distances to get home (*M*=437 kms). Despite the long distances travelled, 76% of respondents admit to leaving site within two-hours of the end of their *night shift* block (*M*=184 mins, *SD*=144 mins) and 65% report leaving site within two-hours of the end of their *day shift* block (*M*=211 mins, *SD*=262 mins). The average number of rest breaks during the journey home is two, with 28% of respondents suggesting that they don't have a break at all. If a break occurs, it lasts an average of 25 minutes.

Preliminary data analysis

An independent samples t-test was conducted to compare intention to leave site immediately following a *day* (*M* = 5.33, *SD* = 1.89) and *night* (*M* = 4.82, *SD* = 1.99) shift block. There was a significant difference in the mean intention scores for workers finishing night and day shifts (t (458) = 2.81, p = .005, two-tailed). This finding suggests that that intention to leave site immediately is greater after day shifts than night shifts. However, the magnitude of the differences in the means (mean difference = .51, 95% *CI*: .15 to .87) was very small (*Cohen's d* = 0.26; r = 0.13).

Control belief-based analyses

A series of MANOVA's were performed to investigate if there were any significant differences between control beliefs and workers with low and high intentions to drive home immediately following a day and night shift block. Given the proposed variation in intention between day and night shifts, separate MANOVA's were performed. Research examining salient beliefs has adopted this analysis technique in order to assess the difference in salient beliefs (including control beliefs) between individuals who engage in the behaviour and those who do not. This analysis technique has been used to examine differences in behavioural intentions associated with concealed texting while driving (Gauld, Lewis, & White, 2014), breast self-examination (Mason & White, 2008) and young driver speeding behaviour (Horvath, Lewis, & Watson, 2012).

The dependent variables represent control beliefs (facilitators and barriers to leaving site immediately following a shift block). As highlighted, industry experts describe a difference between the behaviour of workers finishing *day shifts* and those finishing *night shifts*. Accordingly, in order to appropriately assess this difference, the independent variable, *intention*, was transformed into a

dichotomous variable by splitting the variable at the median on both the night shift (*M*=5.67) and day shift (*M*=6.00) responses. For example, those participants with total response on the intention scale lower than the median were categorised as *'low intenders'* and those falling above the median were categorised as *'high intenders'*. This procedure created four categories. These categories include, low intender following night shifts (*M*=3.14, *SD*=1.56), high intender following night shifts (*M*=6.41, *SD*=.49), low intender following day shifts (*M*=3.46, *SD*=1.62) and high intender following day shifts (*M*=6.62, *SD*=.46). Separate MANOVAs were performed for each shift type to further investigate the differences between the control beliefs of high and low intenders for both shift types. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity. No serious violations were noted.

Barriers

Analysis of factors that impede travel immediately following shift demonstrated that there was no significant difference between high and low intention following *day shifts*, F (9, 218) = 1.30, p = .24; Wilks' Lambda = .95; partial η^2 = .05, or *night shifts, F* (9, 199) = 1.45, p = .17; Wilks' Lambda = .94; partial η^2 = .07. Univariate analyses were assessed using Bonferroni-adjusted alpha level to account for Type 1 error (p< .005) (Field, 2013). Further univariate analyses demonstrated no significant differences between each barrier statement between high and low intenders for both shift types (see: Table 1).

Table 1. Comparison of low and high intenders on barrier items split by shift block

	Low intenders Mean (SD)	**High intenders Mean (SD)**	***F***	**Sig.**	**Partial Eta^2**
Barriers					
Day shift	*n* = 94	*n* = 134			
1. Workplace policies	4.94 (1.53)	4.96 (1.90)	.01	.936	.000
2. Avoid driving at dawn/dusk	4.86 (1.69)	4.19 (2.01)	7.08	.008	.030
3. Avoid night driving	3.99 (1.93)	3.59 (2.14)	2.09	.150	.009
4. Feeling tired	5.76 (1.49)	5.24 (1.96)	4.64	.032	.020
5. Seeing an accident	4.17 (1.86)	3.93 (1.79)	.94	.334	.004
6. Being involved in an accident	4.63(1.98)	4.46 (2.01)	.38	.541	.002
7. Fatigue management	4.53 (1.62)	4.17 (1.95)	2.16	.143	.009
8. Get home in "one piece"	5.74 (1.38)	5.39 (1.77)	2.67	.104	.012
9. Not get home tired	4.61 (1.74)	4.14 (1.90)	3.54	.061	.015
Night shift	*n* = 101	*n* = 108			
1. Workplace policies	4.92 (1.75)	4.55 (1.80)	2.33	.128	.011
2. Avoid driving at dawn/dusk	4.25 (2.05)	3.94 (1.96)	1.20	.276	.006
3. Avoid night driving	3.66 (2.09)	3.61 (1.92)	.04	.851	.000
4. Feeling tired	5.57 (1.82)	5.14 (1.90)	2.85	.093	.014
5. Seeing an accident	4.01 (2.04)	3.51 (1.94)	3.31	.070	.016
6. Being involved in an accident	3.99 (2.10)	3.88 (2.12)	.14	.706	.001
7. Fatigue management	4.13 (2.03)	3.74 (1.85)	2.09	.150	.010
8. Get home in "one piece"	5.38 (1.93)	5.16 (1.85)	.70	.403	.003
9. Not get home tired	4.72 (1.96)	4.15 (1.81)	4.86	.029	.023

* Significant at Bonferroni-adjusted alpha level (p< .005)

Facilitators

There was a statistically significant difference between high and low intention to leave immediately following *day shifts* based on worker facilitating control beliefs, F (7, 219) = 9.27, $p < .005$; Wilks' Lambda = .77; partial η^2 = .23. As with the univariate analyses performed to analyse the barrier items, statistical significance was assessed using Bonferroni-adjusted alpha level (p< .005) (Field, 2013). These analyses demonstrated that low and high intenders differed significantly on all facilitating factors, except carpooling (see: Table 2).

Low and high intenders to leave immediately following *night shifts* significantly differed in relation to facilitating control beliefs, F (7, 204) = 16.78, $p < .005$; Wilks' Lambda = .64; partial η^2 = .37. Univariate analyses demonstrated that low and high intenders differed significantly on all facilitating factors (see: Table 2). Additionally, these effects were greater for those with high intentions to leave site immediately following a shift block compared to those with low intentions.

Table 2. Comparison of low and high intenders on facilitator items split by shift block

	Low intenders Mean (SD)	**High intenders Mean (SD)**	***F***	**Sig.**	**Partial Eta^2**
Facilitators					
Day shift	*n* = 94	*n* = 133			
1. Carpooling	4.69 (2.01)	5.41 (2.18)	6.46	.012	.028
2. Needing to be somewhere	5.00 (1.74)	5.80 (1.60)	12.71	.000*	.053
3. Routine	3.86 (2.00)	5.62 (1.84)	47.03	.000*	.173
4. Experienced distance driver	3.61 (1.92)	4.96 (1.80)	29.47	.000*	.116
5. Car made for country roads	2.95 (1.71)	4.56 (1.92)	42.27	.000*	.158
6. Sick of being on site	4.01 (2.03)	4.93 (2.00)	11.58	.001*	.049
7. To get the drive over with	3.72 (2.02)	4.56 (1.96)	9.71	.002*	.041
Night shift	*n* = 101	*n* = 111			
1. Carpooling	4.53 (2.32)	6.04 (1.79)	28.03	.000*	.118
2. Needing to be somewhere	4.25 (2.17)	5.60 (1.77)	24.99	.000*	.106
3. Routine	3.37 (2.15)	5.83 (1.48)	95.76	.000*	.313
4. Experienced distance driver	3.04 (1.91)	5.10 (1.89)	62.16	.000*	.228
5. Car made for country roads	2.70 (1.69)	4.33 (2.03)	40.01	.000*	.160
6. Sick of being on site	3.28 (2.12)	5.15 (1.86)	47.28	.000*	.184
7. To get the drive over with	2.99 (1.99)	4.98 (1.95)	54.07	.000*	.205

* Significant at Bonferroni-adjusted alpha level (p< .005)

Discussion

The aim of this study was to examine the factors that facilitate or prevent (barriers) workers leaving the mine site immediately following a shift block. Given the anecdotal reports of industry experts, the results provided a comparison between the behavioural intentions following a day and night shift block. While there was a statistically significant difference which demonstrated that workers held a stronger intention to leave site immediately following *day shifts*, the difference was very small. However, a greater number of workers admit to leaving site within two-hours of the end of *night shifts* than *day shifts* (11 percentage point difference).

If workers leave site immediately, the average number of kilometres/hours spent driving home (*M*=437 kms; *M*=248.99 mins) would indicate that workers spend approximately 16-hours working and driving on the last day of the shift block. However, this time does not include time to get ready for work before the shift, getting ready to leave the site or other miscellaneous factors. Therefore, it

is reasonable to consider that drivers could be awake for up to 20-hours on the last day of shift. Research has demonstrated that 17-hours of wakefulness results in driving performance that is equivalent to a blood alcohol concentration of 0.05%; with each additional hour contributing a 0.004% rise (Dawson & Reid, 1997).

There were notable variations between factors which facilitate leaving site immediately following day and night shifts. These variations are discussed in detail below, but are predominately due to the type of shift (e.g., day or night). However, it is difficult to draw comparisons with previous research, as research investigating worker motivations to engage in LDC typically explores factors associated with worker motivations to work in remote locations (e.g., Haslam McKenzie, 2010; Houghton, 1993; Misan & Rudnik, 2015).

Barriers

Using a Bonferroni-adjusted alpha level there were no statistically significant differences between barriers and either intention category following a day or night shift block. However, following a *day shift block*, *avoiding driving at dawn/dusk* is approaching significance. Specifically, *low intenders* are more likely to *avoid driving at dawn/dusk* when compared to *high intenders*. This result is consistent with workers finishing their final *day shift* around dusk when there is a higher risk of animals on the road. However, there is no relationship between *intentions* and *avoiding driving at dawn/dusk* following night shifts. The lack of relationship could be due to the limited opportunity for a worker to drive at either dawn or dusk given that a typical night shift concludes at 06:00hrs.

In respect to those workers finishing *night shifts*, inspection of the barrier items reveals that *not getting home tired* is also approaching statistical significance. Given the consecutive nights awake, it is likely that these workers are tired due to the change in their sleeping patterns and irregular work hours (Scott et al., 2007).

Facilitators

A Bonferroni-adjusted alpha reveals statistically significant differences on all facilitators (except carpooling) for both shift types. Based on the inspection of the mean scores of each group, high intenders were more likely to be encouraged to leave immediately after a *day shift* block when compared with low intenders due to the perception that they are an *experienced long distance driver*, due to their *routine* following a shift and *owning a car built for country roads*. Finally, the mean scores for *needing to be somewhere* facilitated leaving the site immediately following a day shift block for both low and high intenders.

When considering the mean scores of low and high intenders following *night shifts*, high intenders were more likely to be encouraged to leave immediately after a shift block when compared with low intenders due to holding the perception that they are an *experienced long distance driver*, due to their *routine* following *night shifts*, *owning a car built for country roads*, because they are *sick of being on site* and to *get the drive over with*. Furthermore, high intenders appear more likely to want to leave immediately following night shifts because they are *sick of being on site*. Finally, *needing to be somewhere* and *carpooling* facilitated leaving the site immediately after a night shift for both low and high intenders.

Regardless of shift type, *routine* following a shift block was more likely to facilitate a journey home immediately for high intenders when compared to low intenders. Further inspection of the factors facilitating intentions following *day shifts* reveals that *routine* explains 17.3% of the variance in *intention* to leave site immediately following a shift block. This finding demonstrates that workers develop an after work routine that they implement at the conclusion of *day shifts*. Furthermore, *routine* following *night shifts* explains 31.3% of variance in *intention,* a 14 percentage point

increase. This finding demonstrates that the influence *routine* following a *night shift* has on *intention* to leave immediately is much more pronounced. Research describes mining camp life as regimented, suggesting that workers have set routines and processes for all tasks (Misan & Rudnik, 2015). It could be suggested that the *routine* surrounding the preparation for the journey home is associated with the regimented nature of life on-site. Alternatively, the routinised behaviour may have been ingrained from the start of the worker's DIDO career. Changing routinised behaviour is difficult. In order to encourage a safe journey home, the *routine* of leaving immediately following a shift needs to be challenged. However, the difference between behavioural *intentions* following *day* and *night shifts* in respect to *routine* demonstrates that a standard approach to policy, regardless of shift type, would be misguided.

Another facilitator which influences intentions to leave site immediately, particularly following a number of consecutive *night shifts*, is the premise that workers are *sick of being on* site. It was identified in the broader program of research that workers prefer to leave site as soon as possible to get back to 'civilisation'. This need to get back to civilisation is more identifiable following night shifts due to the time of day work is performed and the isolating nature of that shift type.

As mentioned, the findings of this study demonstrate that these workers drive an average of 437 kilometres home following a long shift. The results show that the urge *to get the drive over with* explains 20.5% of variance in intentions to leave immediately following *night shifts*. This finding is notably higher when compared to the amount of variance this facilitator explains following *day shifts*. Following consecutive *night shifts*, workers are exhausted and want to get home to start their rostered time off. However, the *long drive home* is the final 'hurdle' to overcome before they are able to relax.

Finally, the results demonstrate that high intenders are *"somewhat likely"* to be influenced by the perception that they are an *experienced long distance driver* across both day shift and night shift. When considering the mean scores, there is a propensity for high intenders to leave site immediately following a shift block, regardless of the shift type. However, the amount of variance explained by workers perceiving that they are an *experienced long distance driver* is higher following *night shifts* than *day shifts* (11 percentage point increase). Research considering rural and remote driving describes an optimism bias which suggests that road users who frequently drive in rural and remote areas, or those who grew up driving on country roads, perceive that they are a better than other drivers in those areas (Sticher & Sheehan, 2006). Furthermore, there is a perception that if a crash were to occur it would be the fault of the other driver or some external factor (Sticher, 2005). Rural and remote road users perceive that the factors which determine crash risk include the age of the driver, type of vehicle driven and the familiarity with the road (Sticher & Sheehan, 2006). The findings of this study are consistent with optimism bias, which appears to be stronger following night shift blocks. Optimism bias was identified throughout the in-depth interviews in the broader program of research.

Strengths and limitations

Using the TPB, with a focus on control beliefs, this study was able to provide an initial understanding of the facilitators and barriers of leaving site immediately following a shift block. A key strength of this study is the use of a well-validated theoretical framework. Furthermore, while industry experts have previously proposed that shift type influences commuting behaviour immediately following shifts, this study is the first to provide evidence of this influence using empirical methods.

The sample was relatively large (day $n = 239$, night $n = 222$) and was drawn from a large mine site in the Bowen Basin. This mine site is a DIDO mine with a limited number of workers opting to FIFO. There are limitations in the generalisability of these results given the focus of this study on

one DIDO site. However, the sample is generally representative of the mining population as a large proportion of the site was sampled (93.7%). Furthermore, the sample covered all levels of the organisation; from operational-level workers through to management. While the sample was only drawn from one mine site, the average number of years in the industry for participants indicates a high-level of experience in the industry. However, future research should consider similar research across multiple sites.

The participants were asked to self-report about their journey following shift blocks. The self-reporting requirement and the completion of the surveys during work-hours may have led participants to respond in line with company commuting policy due to concerns that the information they provide would not be treated as confidential. However, the results demonstrate that the majority of respondents admitted to leaving site within two-hours of the shift block. This result confirms that on average these workers do not engage in a rest break prior to commuting home. With an average commute time above 4-hours, leaving site without a break means that workers would exceed the 14-hour maximum day, which is in contrast to organisational policy. Given the disclosure about the typical rest break following shifts, it is suggested that there is no issue with social desirability bias or participants being concerned about confidentiality.

Conclusion

The current study is understood to be the first to provide insight into the factors that facilitate and act as a barrier to mine workers leaving immediately following day and night shift blocks and driving home. While initial inspection of behavioural intention reveals a stronger propensity to leave immediately following *day shifts*, this cursory glance fails to consider the facilitators that are more pronounced following a *night shift*. These facilitating factors include *routine*, being *sick of being on site*, *to get the drive over with*, and because workers perceive that they are and *experienced driver*. While industry experts describe the key facilitator for leaving immediately following a night shift as the time of day the journey occurs, these results highlight the complexity of these facilitating factors. The complexity indicates that potential educational campaigns and targeted interventions need to consider the variation in intention and behaviour of worker commuting between shift types.

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